

## Introduction to Sketchpad

### The Tools and What They Do



Arrow Tool - Use these tools to select and drag objects in your sketch. The three variations of the tool allow you to drag-translate (move), drag-rotate (turn), and drag-dilate (shrink or grow) objects.



Point Tool - Use this tool to construct points.



Compass Tool - Use this tool to construct circles.



Straightedge Tool - Use these tools to construct straight objects. The three variations of the tool allow you to construct segments, rays, and lines.



Polygon Tool - Use these tools to construct polygons. The three variations of the tool allow you to construct a polygon, a polygon and the segments that form its edges, or the edge segments only.



Text Tool - Create and edit text.



Marker Tool - Use this tool to create angle markers and tick marks, and to make freehand drawings and notations.




Information Tool - Use this tool to explore how a sketch is constructed and how the objects relate to each other.



Custom Tool - Use this icon to define, use, and manage custom tools.

Hint: Make sure that you click back on the Arrow Tool after using a different tool or you will still be using the selected tool and not be able to select anything.

## Let's Do Some Constructing

1. Open Geometer's Sketchpad 5
2. Go to Graph > Show Grid
3. Using the Straightedge Tool, construct a triangle with the point upward (.
4. Click the left leg of the triangle go to Construct > Midpoint, do the same for the right leg
5. Using the Straightedge Tool, construct a segment between the midpoints
6. Using the Text Tool, hover over the items you wish to have labels make sure the hand turns black and then click the items
7. Using the Arrow Tool, select the 3 points that make up the top left angle, then select Measure Angle, click on the background to unselect everything and then repeat for all the angles
8. Using the Marker Tool, we will now show which angles are congruent with congruency symbols
9. Using the Arrow Tool, click on the segment DE, then click Measure > Length, repeat for segment BC
10. Compare the length of segment DE and the length of segment BC. What do you notice?
11. Use the Compass Tool to create a circle on top of the triangle.
12. Use the Arrow Tool to select the circle, click Measure > Area. You may also find circumference, radius, and the equation for the circle.
13. Using the Straightedge Tool, create a left leg coming off of the bottom of the triangle.
14. Click on the center of the circle and the point connecting the circle to the triangle (make sure that is all that is highlighted), then go to Construct > Line
15. While the line is highlighted (Selected), go to Transform > Mark Mirror
16. Select all parts of the left leg (the points and segments), go to Transform > Reflect
17. Right click on the Line we created and then select Hide Line
18. On the side of the girl that you want to wave, using the Compass Tool create a circle with the top of it about where you want the wave to be
19. Use the Point Tool to create two points on the top of the circle, but not too far apart
20. Select the point on the right side first, then the circle, then the left point go to Construct > Arc on Circle (order matters)
21. Using the Straightedge Tool, start at the midpoints on each side and create arms for your girl
22. On the side with the circle make sure that the endpoint of the segment ends on the arc that was created.
23. Click on just the endpoint on the arc (make sure nothing else is clicked), go to Display > Animate Point
24. Now select the circle, arc and all points that you don't want to be seen, go to Display > Hide Objects
25. You may now create eye, mouth, or anything else you would like to create.